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LAGNIAPPE

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NASA astronaut visits with community leaders, students, employees at Stennis Space Center

NASA Astronaut Dr. James Reilly II, a veteran of two Space Shuttle flights and three space walks, visited Stennis Space Center on Jan. 24 to address employees and students from area schools.

During his visit, Reilly also presented two prestigious Snoopy Awards, the Astronaut Corps' personal achievement awards (see Snoopy Award, Page 2).

NASA's William Parsons, director of Center Operations and Support Directorate at Stennis, was emcee for the program.

Reilly spoke to more than 300 students in a morning presentation and addressed another 30 students along with Stennis employees later that day.

Reilly was selected by NASA to enter the Astronaut Corps in December 1994 and made his first trip to space

See **REILLY,** Page 7

NASA Astronaut Jim Reilly speaks to students from Tupelo Middle School during his recent visit to Stennis. The students are enrolled in a NASA-sponsored program aimed at introducing young women to careers in science.

Reilly, left, presents to William Parsons, director, Center Operations and Support Directorate, a plaque commemorating the flight of STS-108 and NASA's "Flags for Heroes and Families" campaign.

NASA announces proposed budget for fiscal 2003

NASA Administrator Sean O'Keefe unveiled the Bush Administration's proposed fiscal year 2003 budget for the space Agency on Feb. 4. He said the president's budget proposal of $15.1 billion for fiscal year 2003 reflects the administration's commitment to NASA's core research efforts and its fundamental mandate to advance aeronautics and aerospace science.

O'Keefe added that although it is important that NASA "dream big and turn those dreams into reality," it must live up to the president's management agenda that asks the Agency to responsibly live up to those promises.

The proposed budget, which estimates an overall

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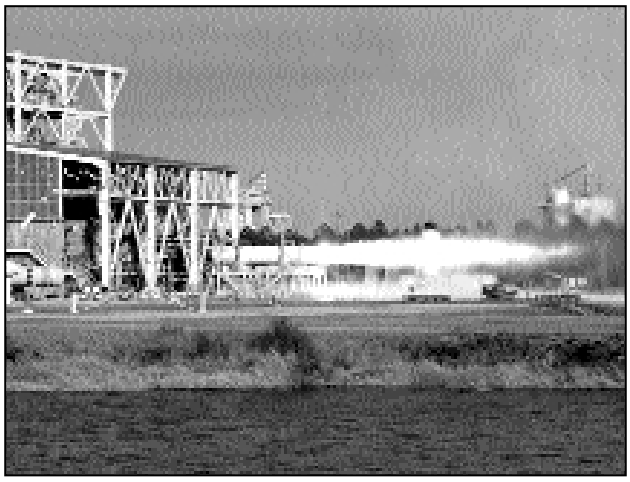
Stennis conducts fourth test on large-scale hybrid rocket motor



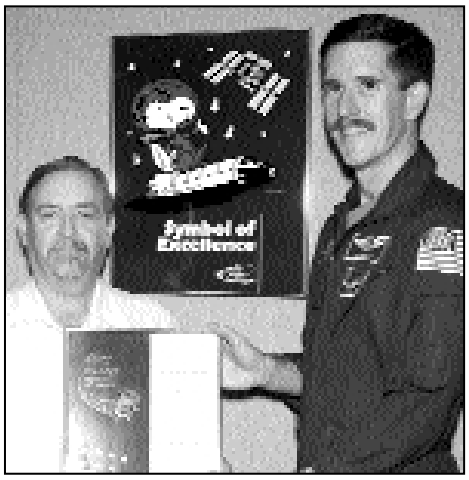
Stennis Space Center recently completed the fourth in a series of large-scale hybrid motor tests.

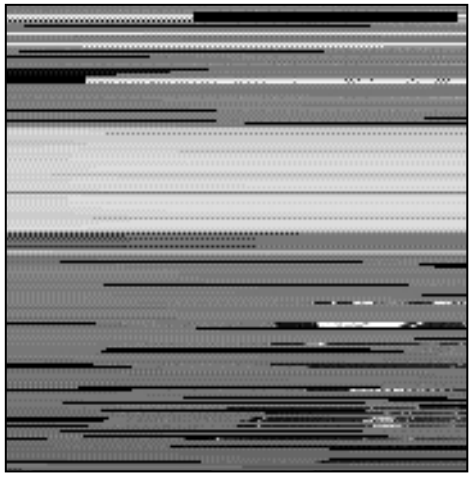
Stennis Space Center completed the fourth in a series of large-scale hybrid motor tests Jan. 17 at 3:45 p.m. The 250,000-pound thrust hybrid rocket motor tested capitalizes on the safety and operational features of a liquid-propulsion system with the cost-savings potential of an inert solid propulsion system.

"The objective of this test was to address two key technical issues that hybrid rockets must overcome — fuel retention at motor burnout and combustion stability," NASA's Gary Taylor, manager for the Hybrid Propulsion Demonstration Program at Stennis, said. "The data generated by this test will move the large-scale hybrid rocket motor concept a giant step closer to operational use in future rocket propulsion applications."

The 250K-hybrid rocket motor was designed, fabricated and prepared for test by an industry consortium of Lockheed Martin Astronautics, Boeing Rocketdyne, Lockheed Martin Michoud Space Systems, Thiokol Corporation and United Technologies Chemical Systems Division. The consortium

See **250K-HYBRID,** Page 7





Astronaut Dr. James F. Reilly II, a veteran of two Space Shuttle flights, in the jump suit in both pictures, presented NASA's Richard G. Rider, left, and Lockheed Martin Space Operations, Stennis Program's Roland C. Vaughn, right, with the Astronaut Corps' personal achievement award, the "Silver Snoopy."

Silver Snoopy

Astronaut presents awards to employees

Astronaut Dr. James F. Reilly II presented two Stennis Space Center employees with the Astronaut Corps' personal achievement award, the "Silver Snoopy," on Jan. 24. NASA's Richard G. Rider and Lockheed Martin Space Operations, Stennis Program's Roland C. Vaughn were the recipients of the awards.

The Silver Snoopy Award program was initiated 32 years ago and represents the astronauts' recognition of individuals' professional dedication and outstanding support that greatly enhance flight safety and mission success in the Space Shuttle program. Rider and Vaughn were each given a certificate and a silver pin flown aboard one of Reilly's missions, STS-89.

Rider, who has worked with NASA for 11 years, is a facilities project manager assigned to the design-engineering branch of the Center Operations and Support Directorate at Stennis. Rider was recognized for his contributions as manager of the design, planning and construction phases of the A-2 Test Stand revitalization project. The A-2 Test Stand

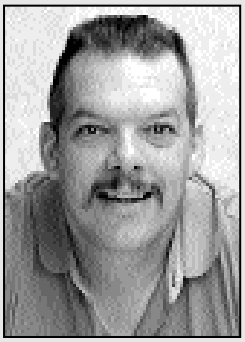
See **SNOOPY**, Page 7

Edge receives NASA contracting award

NASA's Jason Edge, a contract specialist at Stennis Space Center, has been selected as NASA's Contract Specialist of the Year — the first Stennis employee selected for this honor. The award, announced Jan. 17, recognized Edge for his work in the construction-contracting arena.

"While Jason has been with NASA less than two years, he has made a substantial impact in a very short time, as evidenced by this significant recognition from the Agency. We are so proud to have Jason on the Stennis Office of Procurement team," NASA's Rebecca Dubuisson, procurement officer at Stennis, said.

Edge competed against personnel from other NASA field centers and Headquarters personnel. Edge will attend an award ceremony in March in Washington, D.C.



Jason Edge

NEWSCLIPS

NASA develops child car-seat safety device — NASA has developed a safety device called a child presence sensor that would alert parents who leave children strapped in car seats. The device, developed at NASA's Langley Research Center, Hampton, Va., uses precision materials and electronics to sense when a child is seated in an infant or booster seat after the driver has left the vehicle. The sensor sounds warning beeps if the driver moves away from the vehicle. If the driver doesn't return within one minute, the alarm will beep continuously and cannot be turned off until it is reset.

NASA develops blueprint to address aviation issues — NASA's Office of Aerospace Technology has released an integrated strategy identifying four elements of aviation on which NASA will focus: digital airspace, revolutionary vehicles, security and safety, and an educated work force. Digital airspace efforts will provide precise knowledge of air traffic, terrain and weather to pilots and controllers for greater safety and efficiency. Revolutionary vehicle strategy will enable unprecedented levels of mobility and safety while protecting the environment and allowing airports to be quiet, friendly neighbors. Security and safety efforts will protect life and property from hazards and malicious intent. An educated work force will adapt to and use complex technology in a world of rapid advancements. A copy of the report is available at: *http://www.aerospace.nasa.gov*.

Satellites vs. mosquitoes: tracking West Nile Virus in the U.S. — A NASA-funded study uses data from satellites to help track and predict where the West Nile Virus is spreading in North America. Members of the International Research Partnership for Infectious Diseases group, based at NASA's Goddard Space Flight Center, hope to use near-real-time maps to focus resources toward more efficient disease control. The satellite data helps scientists predict outbreaks by showing where conditions are favorable for the insects to thrive.

Crew undertakes radiation experiment

Expedition Four crew — Commander Yury Onufrienko and Flight Engineers Carl Walz and Dan Bursch — worked with several science experiments aboard the International Space Station, including an experiment with an Extravehicular Activity Radiation Monitoring (EVARM) device. Walz and Bush prepared a set of three dosimeters each that were to be used to measure any radiation received during their scheduled Feb. 20 spacewalk. The dosimeters are part of an experiment to better understand and design future radiation shielding in spacesuits.

The EVARM is the first device used on a shuttle mission to measure radiation dosage encountered by the eyes, internal organs and skin during specific spacewalks, and relate it to the type of activity, location and other factors. An analysis of this information may be useful in mitigating potential exposure to spacewalkers in the future.

An Extravehicular Activity Radiation Monitoring (EVARM) experiment badge is shown placed in a pocket in the lower left leg of an astronaut liquid cooling garment.

Bolden nominated for NASA's deputy administrator post

Charles Bolden

Former NASA Astronaut and Assistant Deputy Administrator Maj. Gen. Charles F. Bolden, U.S. Marine Corps, has been nominated by President Bush to serve as NASA's next deputy administrator.

Stennis Space Center Acting Director Mark Craig welcomed the announcement made Jan. 31 by NASA Administrator Sean O'Keefe and the White House. Bolden, 55, currently serves as the Commanding General, 3rd Marine Aircraft Wing in San Diego, Calif.

"We are very excited about welcoming Gen. Bolden back to our NASA family," Craig said.

"Charlie's past contributions to the Agency were invaluable.

Stennis looks forward to the leadership that Administrator O'Keefe and Gen. Bolden as a team will provide in leading us into the future."

Bolden was selected as an astronaut candidate by NASA and qualified as a Space Shuttle pilot astronaut in 1981. He went on to fly four missions in space aboard the shuttle.

STS-109 scheduled for launch Feb. 28 for fourth Hubble Telescope servicing mission

Shuttle managers have announced that STS-109 and its seven-member crew remains on schedule for the planned liftoff of the Hubble Servicing Mission at 6:48 a.m. (EST) no earlier than Feb. 28.

The final decision is pending review of data to determine the stress integrity of Columbia's hydraulic pump attach bolts. STS-109 will be the fourth Hubble Space Telescope Servicing Mission.

NASA split the original third servicing mission into two parts, and conducted the first in December 1999.

Columbia's crew will conduct the next servicing mission 3B and perform five spacewalks over an 11-day mission. Hubble's discovery power will be increased by 10 times and it will receive a new scientific instrument, replacement parts and even a new look.

The diverse and distinguished crew of STS-109 includes an astrophysicist, a veterinarian, a mechanical engineer, a molecular physicist, a Navy fighter pilot, an Air Force test pilot, and a Master Army aviator. Five of the seven answer to "doctor." Besides the doctor of veterinary medicine, four of the crewmembers hold Ph.Ds.

Two-time shuttle veteran Scott Altman will command the mission.

With him on the flight deck will be pilot Duane Carey, making his first space flight, and flight engineer and robotic arm operator Nancy Currie, with three previous missions to her credit.

Payload Commander John Grunsfeld is no stranger to Hubble. This astrophysicist is a veteran of three flights, including the 1999 Hubble servicing mission, when he performed two spacewalks. Now he will lead the spacewalking team, which includes veteran astronauts James "Jim" Newman and Richard "Rick" Linnehan, and first-time flyer Michael "Mike" Massimino. The four will work in alternating pairs to perform the five planned spacewalks.

Columbia is scheduled to return to Earth March 11, ending NASA's first non-station shuttle flight in more than two years.

StenniSphere reopens: thousands see new exhibits, stage show

StenniSphere, Stennis Space Center's award-winning visitors center, reopened to the public Jan. 28.

Opening day drew more than 400 guests, some from as far away as Scotland, eager to learn about America's largest rocket test complex and to be entertained by new exhibits and the new live stage show, "Oh My Stars, We've Landed on Mars!"

Charles and Flora Roth of Grand Ledge, Mich., were vacationing on the Coast and heard about the reopening on television.

"It's very nice," said Charles Roth, who said his favorite attraction was the Space Shuttle cockpit simulator, even though he admits he didn't exactly score a smooth landing. "I didn't have my glasses," he explained.

Still, he did better than Rick Foltz of Lower Lake, Calif., who crashed and burned the shuttle twice. Foltz was at StenniSphere with his wife, Marti, and their friend, Barbara Watts of Slidell, La. Foltz didn't offer any reasons for his poor "flying record" other than to say he's really a Navy man. He, his wife and Watts all are retired from the U.S. Navy and cited their favorite exhibit as the Commander, Naval Meteorology and Oceanography Command display.

None of them tried out the new Spaceball Gyro Chair but enjoyed watching other visitors turn themselves into human gryoscopes on the chair, which is designed similar to one that NASA uses to train astronauts.

Dr. Halley Comet and Cosmo (aka Visitor Relations Specialists Wendy Lesieur and Ryan Dearman, respectively), play astronauts who take visitors on an entertaining and educational journey to the Red Planet in the new stage show, "Oh My Stars, We've Landed on Mars!"

Bernie Kapinus and Jan Barnett, both of Morris, Ill., were delighted to find StenniSphere open to the public. Kapinus and Barnett stopped by on their way to Florida.

One of StenniSphere's most exciting new exhibits is the Spaceball Gyro Chair. Visitors are invited to take a spin and see what it's like to be trained like a NASA astronaut.

First stop on a national tour

Johnson Space Center's traveling exhibit of the International Space Station made its first stop of a national tour at Stennis Space Center's Launch Pad at the I-10 Welcome Center. The two 48-foot trailers were a mock-up of the habitation and laboratory modules on the real International Space Station. The exhibit left Stennis on Feb. 8, heading for its next stop in Tallahassee, Fla.

The International Space Station traveling exhibit, Space Station Imagination, drew 4,296 visitors, including 318 students, during the eight days the trailers were at the I-10 Launch Pad.

A Day in the Life of . . .

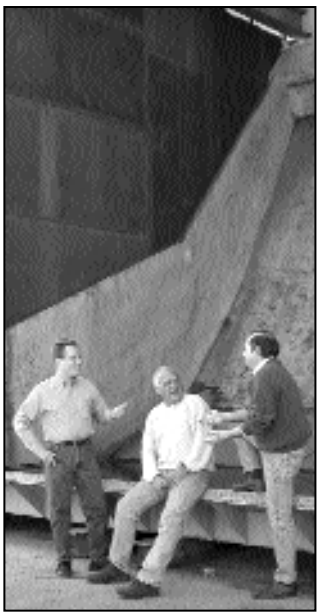
Propulsion test planning with

E-Complex Engineering

From left, NASA engineers Randy Canady, Dale Sewell, Harry Ryan and Mark Hughes discuss site plans on the E-4 test stand construction project. Stennis has worked with Sverdrup, Mississippi Space Services and Marshall Space Flight Center personnel to develop E-4, Stennis' first facility for a future "air-breathing" propulsion system known as the Rocket-Based Combined Cycle.

Seated from left, NASA design engineers Paul Rieder and Michele Beisler review E-3 drawings with Mississippi Space Services' Ben Moore, standing, to ensure that the recently upgraded facility is prepared to meet the requirements of the Boeing MK67 pump test project.

The demands of keeping pace with one of the most active and flexible test complexes in America proves to be an ongoing challenge for the Engineering Division of Stennis Space Center's E-Complex. The complex is currently comprised of three test stands — E-1, E-2 and E-3 — with seven separate test cells for development of next-generation rocket propulsion systems. A fourth test stand, E-4, in the early phases of construction, will provide Stennis with its first facility for a future "air-breathing" propulsion system known as the Rocket-Based Combined Cycle.



Designing modifications to the test cells in the E-Complex is an integral part of the complex's flexibility to meet customers' requirements. Piping-design work by, left, NASA's Bryan Haas and, right, NASA's Richard Rauch, and flame deflector analysis by NASA's Peter Sulyma, center, ensures that the E-2 Cell 2 is capable of testing medium-sized LOX/kerosene engines and stages.

Pro/Engineer Computer Assisted Drawing and drafting services provided to NASA by, from left, Lockheed Martin Space Operations' Kevin Necaise and Paul Taliancich, supervisor, are essential for facilitating the exchange of information between Stennis and its test customers.

"The challenge for engineering is to accommodate unique and varied test-article requirements into the appropriate test facilities at minimum cost while maintaining an ambitious test schedule without compromising safety," NASA's Shamim Rahman, chief of the Engineering Division of the Propulsion Test Directorate at Stennis, said.

The task is one of extremes. Division engineers work with rocket propulsion systems designed to operate at either very low or high pressures and temperatures, requiring very low- or high-interface loads. Electrical and data acquisition systems must also be designed to function quickly and accurately in controlling the high-value assets at the test facilities.

As new business comes to the complex, the Design and Analysis Branch works in concert with the Test Technology Branch to evaluate customers' requirements and specifications. Mechanical and electrical modifications to test cells are conceptualized, designed and analyzed.

"NASA design engineers work with engineers from Lockheed Martin Space Operations, Stennis Programs, Mississippi Space Services and other contractors to provide the special test equipment needed to accommodate various test

See **E-COMPLEX**, Page 8

Ron Magee, NASA's environmental officer at Stennis Space Center, stands behind security guard Frank Williss to check cars as they enter the center Jan. 15. Magee, along with his environmental team, was counting passengers to establish a baseline he'll use in a campaign to increase the number of carpoolers. This baseline is the beginning of a three-year campaign to increase carpooling in an effort to reduce air pollution.

Biological threat detection system enhanced by NASA partnership

Research funded by NASA at Stennis Space Center and conducted by the University of New Mexico Earth Data Analysis Center (EDAC) could soon result in an enhanced version of a reporting system that allows healthcare professionals to recognize and react swiftly to biological threats.

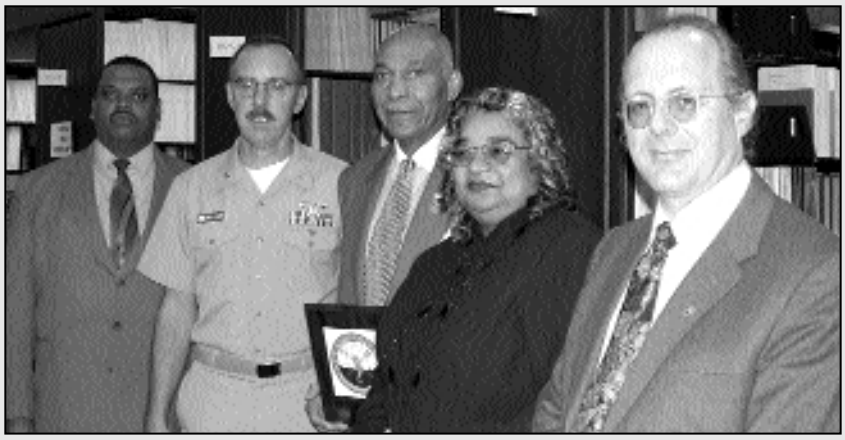
The Rapid Syndrome Validation Project (RSVP) is a real-time syndrome monitoring system developed by Sandia National Laboratories (SNL), Albuquerque, N.M., to report and analyze symptoms and track disease outbreaks. By analyzing real-time health information such as the frequency, chronology and geography of reported symptoms, medical personnel can be alerted to non-specific symptoms that could indicate a serious biological threat. Potential biological threats include bioterrorism and diseases such as influenza, HIV and Hantavirus.

The RSVP system tracks symptoms, not just confirmed diagnoses, so unusual symptoms can serve as an immediate warning. Isolated incidents of fever and malaise, for example, might seem insignificant; a coordinated analysis of those symptoms according to time, location, and frequency, however, could indicate an infectious disease event in progress.

NASA's role in the project has been to facilitate the research by UNM EDAC, a NASA Affiliated Research Center (ARC), to evaluate the usefulness of remote sensing data for analysis of disease transmission and origin. In collaboration with SNL, UNM EDAC is working to add geospatial reporting capabilities to the system. This feature will provide geospatial data, including water conditions, vegetation and wildlife features, to be evaluated in coordination with those analytical features already in place. "The RSVP ARC project is an example of participating at a very early stage of development of an important disease surveillance system, which is national in scope," said Michael Inglis of UNM EDAC.

NASA's ARC Program is focused on the development of remote sensing applications to improve decision-making capabilities for critical areas such as environmental assessment, resource management, community growth and infrastructure, and disaster management. Through innovative partnerships with leading universities, representatives from state, local, regional, tribal and commercial interests can participate in the development of remote sensing applications that ultimately provide an operational capability to the respective user community. "The RSVP is a good example of a successful ARC project that could yield a valuable product," said Anne Peek, NASA's Earth Science Applications Directorate at Stennis and ARC program manager.

The RSVP system is operational at the University of New Mexico Medical Center, the New Mexico Department of Health, and several other New Mexico sites. Sandia Laboratories manufactured the database, which is planned for international use.



The Naval Oceanographic Office celebrated the 13th annual observance of Dr. Martin Luther King's Birthday on Jan. 17 in the Maury Library at Stennis. Program participants included, from left, NAVOCEANO's Harold Little, Acting Commanding Officer Capt. Peter Furze, Guest Speaker Ret. Brig. Gen. George Price, NAVOCEANO's Valli Battle and Steve Faber.

NASA's Southeast Regional Technology Transfer Center held its 2002 winter meeting at Stennis on Feb. 6. The regional technology center staff works closely with NASA program offices and industry partners to create licensing and cooperative opportunities. The NASA Technology Transfer Office at Stennis hosted the group, who visited StenniSphere, the space center's award-winning visitor center, before leaving Stennis.

REILLY . . .

(Continued from Page 1)

Jan. 22, 1998, as the Space Shuttle Endeavour launched on the eighth Shuttle-Mir docking mission.

On July 12, 2001, Reilly once again rocketed into space, this time aboard the Space Shuttle Atlantis.

At Stennis, Reilly treated audiences to a 20-minute video diary of his 13-day mission to the International Space Station. He also discussed NASA's space mission and the Agency's requirements for astronauts and answered questions that ranged from "How do astronauts sleep?" to "How long does it take after returning from a space mission to readjust to Earth's gravity?"

Reilly shared with students what he said is the best advice he's ever received: "Be yourself. Do what you really like to do. When you pick an avenue of study, choose something that you would do whether or not you got paid to do it."

He also advised those interested in becoming astronauts themselves to never give up. "It took me eight years from the time I began applying until the time I got an interview (to join NASA's astronaut program). I was constantly working on my qualifications," he said. "The whole secret is to do what you like you to, because you'll work harder at that than at anything else."

"I had the opportunity to get to know Jim while working on the Astronaut Selection Committee at Johnson Space Center for the last astronaut class, so it was really great to see him during his visit to Stennis," said Parsons, director of center operations at Stennis. "Jim did his usual outstanding job speaking to students and employees about his recent flight."

Calling all women....

Does your mother really wear combat boots? Is your sister a sumo wrestler?

NASA Federal Women's Advisory Council is looking for women in jobs historically held by men as the focus of the Women's History Month program.

If you or someone you know fits this role, contact Desiree Thompson at Ext. 8-3966 by Feb. 27.

SNOOPY . . .

(Continued from Page 2)

where the Space Shuttle Main Engines are currently tested.

Vaughn, a mechanical engineer, has supported propulsion testing and engineering programs at Stennis since 1989. He was recognized for his accomplishments in improving the management tools for planning, costing and scheduling activities in support of the test stands, which resulted in a cost savings of more than $250,000 in providing safer and more efficient rocket engine testing.

BUDGET . . .

(Continued from Page 1)

funding level of $173.8 million for Stennis Space Center, maintains funding near the current level for the Space Shuttle program and calls for increased funding for the Space Launch Initiative and other programs that are developing new technology for future launch systems.

"These funding levels ensure that propulsion test activities at Stennis remain at a steady pace and test infrastructure will continue to be upgraded and maintained," said Stennis Space Center Acting Director Mark Craig.

"I am pleased that the budget request also recognizes the importance of continuing NASA's Earth Science programs and the role that Stennis plays as lead center for remote sensing applications."

While the 2003 funding estimate for Stennis is less than the center received in 2002, Craig said the center's final funding levels are often not determined until program schedules and other decisions are made later in the year.

"We need to remember, this is only the first step in the budget process. Congress must still act on the president's budget request," Craig said.

250K-HYBRID. . .

(Continued from Page 1)

will analyze the data from the test and report to NASA on the motor's stability and fuel retention after its 27-second test firing.

Hybrid systems burn liquid oxygen with an inert solid fuel. The two propellants are separated in different tanks until motor ignition, making the system extremely safe. "The liquid oxygen is pumped into the fuel tank that also serves as the combustion chamber after ignition," Taylor said.

The hybrid rocket motor concept is more than 60 years old, NASA's Boyce Mix, director of the Propulsion Test Directorate at Stennis, said. "The California Rocket Society was the first to test the hybrid rocket design in the United States. In April 1943, the group tested a system using oxygen and carbon. This rocket motor uses advanced propellants and is 70 inches in diameter, 45 feet long and weighs 125,000 pounds."

SAFETY CORNER

Safe driving important part of workplace safety

One of the most dangerous environments that employees enter every day is the motor vehicle. It isn't necessarily the vehicle itself that is dangerous; it's what drivers do when they get behind the wheel that creates danger.

Whether employees drive on the job or just to and from work, motor vehicle safety is an important part of workplace safety. Here are some tips for staying safe and alive while in a motor vehicle:

Tips for staying safe

- Use caution when backing any vehicle.
- Always wear a seat belt.
- Drive at a safe speed.
- Do not use a cell phone while driving.
- Do not follow other vehicles too closely.
- Give your undivided attention to your driving.
- Plan ahead to avoid sudden moves.
- Drive defensively. Be prepared for the unexpected.
- Never drive under the influence of drugs or alcohol.

Due to recent speed limit violations on site, the Stennis security contractor has increased its vigilance in ticketing speeding vehicles. Security officers have equipped their patrol cars with additional radar units to assist in these efforts.

QUICK LOOK

■ **Stennis' Association for Cultural Awareness** will sponsor the 23rd Annual Black History program Feb. 28 from 11 a.m. until 1 p.m. in the StenniSphere auditorium. Bishop Vance Woods, pastor and founder of the Word of Power Ministries, will be guest speaker. For more information, contact Rhonda Foley at Ext. 8-1081.

■ **A procurement conference and fair** designed to build partnerships between private businesses and government agencies is scheduled for March 6-7 at the Mississippi Gulf Coast Coliseum in Biloxi. For more information, contact Richard Speights at (228) 396-1288.

■ **Volunteers and sponsors are needed** for the 20th Annual Area III Special Olympics program at Stennis, slated for March 16. The event, coordinated this year by the National Data Buoy Center, will bring some 250 athletes from Hancock, Harrison, Pearl River and Stone counties. To participate, contact Becky Rotundo at Ext. 8-5352.

■ **Astro Camp Saturday** resumes its schedule at StenniSphere Saturday, March 16. Call Ext. 8-2322 or 1-800-237-1821 (Option 1) to register. Don't miss this one-day camp!

E-COMPLEX . . .

(Continued from Page 5)

articles," NASA's David Coote, chief of the Design and Analysis Branch, said. "For instance, we have just finalized all designs for new low- and high-pressure cryogenic piping for the Integrated Powerhead Development Fuel Pump test project in E-1 Cell 2."

NASA's Bill St. Cyr, chief of the Test Technology Branch, said that technologists address current needs for assuring and enhancing safety and operability.

"Our role is to bring technologies, current or future, to E-Complex, and figure out a better, safer way of applying them," he said. "For example, hydrogen peroxide has a fairly narrow temperature band that must be held to avoid runaway propellant decomposition. NASA engineers Wanda Solano and Chuck Thurman led development of Stennis' first wireless sensor package for the remote monitoring of hydrogen peroxide drum temperatures. The sensor allows for constant monitoring to provide a greater measure of safety."

The engineers at E-Complex represent a diverse range of experience in mechanical and electrical engineering disciplines. "Our customers, and ultimately Stennis, are the benefactors of that diversity as it enhances productivity and motivation toward meeting the design and technology challenges associated with propulsion testing," NASA's Robert Lightfoot, deputy director of the Propulsion Test Directorate at Stennis, said.

LAGNIAPPE

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